



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,252	03/26/2001	Fred Stacey	20510-11.00	1576
20350	7590	01/07/2005	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP			ZHENG, EVA Y	
TWO EMBARCADERO CENTER			ART UNIT	
EIGHTH FLOOR			PAPER NUMBER	
SAN FRANCISCO, CA 94111-3834			2634	

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/818,252

Applicant(s)

STACEY ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 5 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### ***Response to Arguments***

1. The objections to claims have been withdrawn because of the amendment.

2. Applicant's arguments filed on September 3, 2004 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

a) Applicant's argument – Regarding claims 1-3 and 8-9 as rejected under 35 U.S.C. 102(e) as being anticipated by Jones. (6,310,909), applicant argues that "there's no disclosure in Jones of transmitting voice signals over interface 23. Jones fails to teach or suggests a PSTN interface coupled to transmit and receive the voice signal'.

Examiner's response – Jones disclose digital communication via twisted pair telephone lines in DSL system. A PSTN interface (23 in Fig. 2) coupled to a transmitter and a receiver. Jones explicitly states that when transmitting signals from the transmitter to receiver the twisted pair telephone loop 23 is permitted transmitting of communications signals (Col 6, L 18-24). Jones's invention is particularly relates to digital communication via twisted pair telephone lines in DSL system and vice band signals. Thus, Jones didn't fail to handle voice signals and Jones meets all the limitations in amendment claims 1-3 and 8-9.

b) Applicant's argument – Regarding claims 1-3 and 8-10 as rejected under 35 U.S.C. 102(e) as being anticipated by Long et al. (5,991,311), applicant argues that "there's no disclosure in Long et al. of transmitting or receiving voice signals over the TEL line". Long et al. also fail to teach a synchronization circuit.

Examiner's response – Long et al. disclose a telephone interface connects to a copper-pair telephone line (TEL line 20) connected to DSL equipment at a remote customer site. The copper-pair telephone line is a DSL line shares a cable bundle with TCM-ISDN lines driven by ISDN devices (Col 4, L37-41). It is well known that TCM-ISDN modem provide fast internet access. It is also well known that users can make telephone calls through internet access. Thus, Long et al. didn't fail to handle voice signals. Long et al. also disclose a burst timing control (98 in Fig. 11). Though the burst timing control circuit control the timing for transmit and receive window of data, the data is synchronize by this timing control. Therefore, Long et al. meets all the limitations in amendment claims 1-3 and 8-10.

c) Applicant's argument – Regarding claims 1, 6 and 7 as rejected under 35 U.S.C 103(a), "Jones the timing recovery circuit is disclosed as synchronizing two communication transceivers, and not to synchronize voice signals and DSL data signal."

Examiner's response – As mentioned above, both DSL and TCM-ISDN modem provide fast internet access. It is well known that users can make telephone calls through internet access. Signal transmitted in both modems have both voice and data. Data and voice are transmitted between communicating transceivers. Therefore, synchronizing between transceivers is the same as synchronizing between voices signals and data signals.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 and 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (US 6,310,909 B1).

a) Regarding claim 1, Jones discloses a system for synchronizing voice signal received via a public switched telephone network (PSTN) and data signal received via a digital subscriber line (DSL), the system comprising:

a PSTN interface (23) coupled to transmit and receive the voice signal;

a data DSL transceiver (as shown in Fig. 2) coupled to modulate (block 13) and demodulate (block 30) the data signal;

a synchronization circuit (block 29) coupled to synchronize said voice signal and said data signal (Col 6, L 39-41); and

a converter circuit (27) coupled to convert the synchronized voice signal and the synchronized data signal between analog and digital formats.

b) Regarding claim 2, Jones discloses wherein said converter circuit converts said voice signal and said data signal from a digital format to an analog format (block 16 in Fig. 2) for transmitting a combined voice and data signal.

c) Regarding claim 3, Jones discloses wherein said converter circuit converts said voice signal and said data signal from an analog format to a digital format (block 27 in Fig. 2) for receiving a combined voice and data signal.

d) Regarding claim 8, Jones discloses a method of synchronizing a public switched telephone network (PSTN) voice signal and a digital subscriber line (DSL) data signal, the method comprising the step of:

upsampling (block 17 in Fig. 2) the voice signal, to increase said voice signal's frequency to a frequency comparable with that of the data signal; and

sample slipping one of said voice signal and said data signal, to synchronize said voice signal and said data signal (Col 6, L12-17).

e) Regarding claim 9, Jones discloses the step of sample slipping synchronizes said voice signal with said data signal (Col 6, L12-17).

f) Regarding claim 11, Jones disclose the system of claim 1 further comprising: circuitry adapted to combine the voice signal and the data signal (inherent as DSL modem; as shown in Fig.2)

g) Regarding claim 12, Jones disclose the system of claim 11 further comprising: a converter circuit coupled to convert the combined voice and data signals between analog and digital formats (27 in Fig. 2).

5. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Long et al. (5,991,311) (AAPA).

a) Regarding claim 1, Long et al. disclose a system for synchronizing voice signal received via a public switched telephone network (PSTN) and data signal received via a digital subscriber line (DSL), the system comprising:

a PSTN interface (tel line) coupled to transmit and receive the voice signal;

a data DSL transceiver (as shown in Fig. 11) coupled to modulate and demodulate the data signal;

a synchronization circuit (block 98 in Fig. 11) coupled to synchronize said voice signal and said data signal; and

a converter circuit (block 44 in Fig. 11) coupled to convert the synchronized voice signal and the synchronized data signal between analog and digital formats.

b) Regarding claim 2, Long et al. disclose the converter circuit converts said voice signal and said data signal from a digital format to an analog format (block 44 in Fig. 11) for transmitting a combined voice and data signal.

c) Regarding claim 3, Long et al. disclose the converter circuit converts said voice signal and said data signal from an analog format to a digital format (block 44 in Fig. 11) for receiving a combined voice and data signal.

d) Regarding claim 8, Long et al. disclose a method of synchronizing a public switched telephone network (PSTN) voice signal and a digital subscriber line (DSL) data, the method comprising the steps of:

upsampling (block 104 in Fig. 11) the voice signal, to increase said voice signal's frequency to a frequency comparable with that of the data signal; and

sample slipping one of said voice signal and said data signal, to synchronize said voice signal and said data signal (Col 10, L40-46).

e) Regarding claim 9, Long et al. disclose the step of sample slipping synchronizes said voice signal with said data signal (Col 10, L40-46).

f) Regarding claim 10, Long et al. disclose a method of synchronizing a public switched telephone network (PSTN) voice signal and a digital subscriber line (DSL) data signal, the method comprising the steps of:

determining a phase offset (block 128 in Fig. 13) between the voice signal and the data signal; and

shifting one of said voice signal and said data signal according to said phase offset, to synchronize said voice signal and said data signal (Col 12, L20-25, inherent as signal shifting).

g) Regarding claim 11, Long et al. disclose the system of claim 1 further comprising: circuitry adapted to combine the voice signal and the data signal (inherent as TCM-ISDN modem; Fig 11) .

h) Regarding claim 12, Long et al. disclose the system of claim 11 further comprising:

a converter circuit coupled to convert the combined voice and data signals between analog and digital formats (44 in Fig. 11).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted prior art (AAPR) in view of Jones.



Regarding claim 1, AAPA disclose a system for synchronizing voice signal received via a public switched telephone network (PSTN) and data signal received via a digital subscriber line (DSL), the system comprising: (as shown in Fig. 1, prior art drawing)

a PSTN interface (PSTN I/F) coupled to transmit and receive the voice signal;  
a data DSL transceiver (ADSL ATU-C Transmitter and Receiver) coupled to modulate and demodulate the data signal;

a converter circuit (DAC) coupled to convert the synchronized voice signal and the synchronized data signal between analog and digital formats.

AAPA disclose all the subject matter described above, except the specific teaching of a synchronization circuit.

Jones, in the same field of endeavor, teaches a timing recovery circuit (29 in Fig. 2), which synchronization of two communicating transceivers (Col 6, L39-41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ the synchronization circuit by Jones in the voice circuit of AAPR in order to improve efficiencies of the framing rate of the voice channels in the DSL data streams.

8. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al. in view of applicant admitted prior art (AAPR).

Regarding claims 6 and 7, Long et al. disclose a synchronization circuit synchronizes said voice signal with said data signal and comprises:

a phase offset detection circuit (block 128 in Fig. 13) coupled to detect a phase difference between a PSTN clock associated with said voice signal and said a DSL clock associated with said data signal;

a phase interpolation circuit coupled to adjust said voice signal according to the detected phase difference (block 104, 108 and 110).

Long et al. disclose all the subject matter described above, except the specific teaching of a multiplexer and a demultiplexer circuit.

AAPA, on the other hand, teaches a multiplexer and a demultiplexer circuit (as shown in Fig. 1, prior art drawing).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention was made to combine the phase detection circuit by Long et al. with the voice circuit by AAPR in order to improve signal synchronization especially in PSTN and DSL clock systems.

### ***Allowable Subject Matter***

9. Claims 4 and 5 are allowed.

10. The following is an examiner's statement of reasons for allowance:

None of the prior art teaches or suggests that a synchronizing signal system comprising a PSTN interface coupled to the transmitter and receiver for voice signal; a DSL transceiver coupled to modulate and demodulated the data signal; a synchronization circuit coupled to synchronize the voice and data signal; a converter to convert the voice signal between analog and digital formats and wherein the synchronization circuit further comprising a second converter for convert voice signal

from a companded format a linear format; an upsampler circuit to increase a frequency of voice signal from from  $(8 + \delta)$ .M kHz to  $(8 + \delta)$  kHz, and a re-timer circuit to synchronize the upsampled voice signal with data signal.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

December 27, 2004

Eva Yi Zheng  
Examiner  
Art Unit 2634



**SHUWANG LIU  
PRIMARY EXAMINER**